A search for the decapping enzyme DCP2

Trypanosome extracts have *in vitro* decapping activity, yet trypanosomes and related kinetoplastids do not have any obvious homologues of DCP2, DCP1, or EDC3. The trypanosome genome encodes 5 potential MutT hydrolases. The protein sequence encoded by locus Tb927.5.4350 yields DCP2 as the best match after a blastp search of the *S. cerevisiae* genome. However this protein has a peroxisomal targeting signal (ending with LKTRSSI) and was found in the glycosomal proteome {Colasante, 2006 #1052}. The next best match, Tb10.70.2530, is not predicted to be in an organelle and does not have an evident yeast homologue. The third, (Tb11.01.7290) has a mitochondrial targeting signal, the fourth (Tb927.6.2670) is the splicing factor UAF30 and the remaining one (Tb11.01.15780) is a homologue of yeast YSA1. Tb10.70.2530 therefore seems to be the only viable *DCP2* candidate. Since all other proteins required for mRNA degradation in trypanosomes are essential, we expected the decapping enzyme to be essential as well. Trypanosomes with RNAi targeting Tb10.70.2530 were easily obtained, which is unusual for an essential gene (not shown). Tetracycline addition had no effect on trypanosome growth (data not shown) but by Northern analysis the mRNA was still detectable in RNAi-induced cells. Thus we have no evidence that Tb10.70.2530 is the decapping enzyme.